Docket	:	A.06-02-023
Exhibit Number	:	
Commissioner	:	John Bohn
Admin. Law Judge	:	Kirk A. McKenzie
DRA Witness	:	R. A. Charvez

DIVISION OF RATEPAYER ADVOCATES
CALIFORNIA PUBLIC UTILITIES COMMISSION

REPORT ON THE COST OF CAPITAL FOR GOLDEN STATE WATER COMPANY

Test Year 2007 And 2008
Attrition Year 2009
Application

San Francisco, California
May 2006

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION AND SUMMARY

This Report contains the recommendations of the Water Branch of the Division of Ratepayers Advocates (DRA) regarding the rate of return for 2007 through 2009 in the Golden State Water Company (GSWC) general rate case, A. 06-02-023. DRA recommends a return on equity (ROE) of 9.68% for each the years from 2007 to 2009, while correspondingly GSWC requests an ROE of 11.20%. DRA accepts GSWC's requested capital structure for the test years, which is 49.20% long-term debt and 50.80% common equity. Furthermore, to simplify the rate case process, DRA recommends the same cost of long term debt of 7.46% for all three years, 2007 – 2009, which is based on the average of GSWC's requested costs of long-term debt for the years 2007-2009 of 7.48%, 7.46%, and 7.45%, respectively. DRA recommends a rate of return (ROR) for GSWC of 8.59% for the years 2007 – 2009, as opposed to GSWC'S request of 9.37% for 2007; 9.36% for 2008; and 9.35% for 2009. The primary difference between DRA and GSWC is in the return on equity (ROE) component. This difference in the requested and recommended returns on equity is based on the use of different models, different model results, and GSWC's adjustments to model results to reflect the presumed additional risks. DRA rejected these risk adjustments because GSWC fails to show why these adjustments are necessary at this time.

Table 1-1

Golden State Water Company

Comparison of Requested and DRA Recommended

Rate of Return

For the Years 2007 through 2009

	Golden State Water			DRA Recommended		
	Capital Structure	**Cost Factor**	**Weighted Cost**	**Capital Structure**	**Cost Factor**	**Weighted Cost**
Test Year 2007						
Long-Term Debt	49.20%	7.48%	3.68%	49.20%	7.46%	3.67%
Common Equity	50.80%	11.20%	5.69%	50.80%	9.68%	4.92%
Total	100%		9.37%	100%		8.59%
Test Year 2008						
Long-Term Debt	49.20%	7.46%	3.67%	49.20%	7.46%	3.67%
Common Equity	50.80%	11.20%	5.69%	50.80%	9.68%	4.92%
Total	100%		9.36%	100%		8.59%
Test Year 2009						
Long-Term Debt	49.20%	7.45%	3.67%	49.20%	7.46%	3.67%
Common Equity	50.80%	11.20%	5.69%	50.80%	9.68%	4.92%
Total	100%		9.36%	100%		8.59%

CHAPTER 2: QUANTITATIVE ANALYSIS

A. INTRODUCTION

The market's required return on equity is not directly observable. Implicit in stock prices, however, are investors' expected returns. Analytical techniques based on finance theory have been developed to infer the return on equity from stock-price data. DRA uses two financial models – Discounted Cash Flow (DCF) and Risk Premium (RP) -- to estimate investors' expected ROE for GSWC.

B. Comparable Group

DRA has determined a range of ROEs for GSWC by applying the DCF and RP Models to a group of comparable water utilities. Results derived from the DCF may be biased and less reliable when applied to a specific company, such as one with unusually high or unusually low dividend growth rates. Applying the DCF and RP Models to a larger sample, such as DRA's comparable group, serves to correct such biases. DRA chose six utilities as the comparable group using the following criteria: (1) water operations that account for at least 70% of the utility's revenues and (2) the utility's stocks are publicly traded. This same comparable group has been used by DRA in other prior and current analyses.

Table 2-1 shows the financial characteristics for the comparable group of companies: American States Water, California Water Service, Connecticut Water Service, Middlesex Water, Aqua America, and San Jose Water. GSWC uses the same comparable group as DRA.

In the past some water utilities have rebutted the use of staff's data and models by taking individual components out of context to supposedly illustrate that staff's results are not reasonable. Since staff bases its recommended ROE on an average of results using various components (all described in the following discussion), taking an individual component and calculating the models in such a "vacuum" is incorrect. This "recalculation" of staff's models in this way is improper and cannot be applied to the results calculated in this report.

C. Discounted Cash Flow Model

The DCF Model reflects the current market price of a share of common stock equal to the present value of the expected future stream of dividends and the future sale price of a share of stock, discounted at the investor's discount rate. The expected rate of return is expressed by the discount rate that equates the market price of the stock to the present value of the flow of cash receipts. The DCF Model solves for the investor's discount rate as follows:

$$r = D_1/P_0 + g,$$

where:

r = the investor's expected return on equity,

D_1 = the expected dividend in the next period,

P_0 = the market price in the current period, and

g = the expected future dividend growth rate.

1) Dividend Yield

The dividend yield depends on next year's dividends per share[1] and the current stock price. The next year's expected dividend yield, Div_1/ P_o, can be estimated by multiplying the current dividend yield, Div_o/P_o, by one plus the expected growth rate, g.

Table 2-2 shows the current annualized dividend yields for the comparable group. The average yield is 2.78% over the most recent three-month period of February 2006 through April 2006, 2.83% for the most recent six-month period of November 2005 through April 2006, and 2.86% for the twelve-month period of May 2005 through April

[1] Adjusted to account for the quarterly compounding of the dividend in order to account for the time value of money. If the dividend were paid only once a year, then it would be larger, to account for the time value of money. Since the dividend is paid quarterly, the total of those 4 payments is less than what one yearly payment would have been, since the investor has the opportunity to invest it and earn on it.

2006. Three different periods are used in order to mitigate period specific biases and to consider both current and long-term trends.

2) Growth Rates

The DCF Model assumes that dividends grow at a constant rate, **g**, and continue growing at that rate for the foreseeable future. In order to balance the historical and forecasted growth rates, DRA examined three types of growth rates to estimate future dividend growth: (1) historical dividend and earnings growth rates, (2) sustainable growth rates, and (3) forecasted growth rates.

(a) Historical Growth Rates

(i) *Earnings and Dividend Growth*

Historical growth rates can provide a useful indication about future growth when past conditions can be reasonably expected to continue. Table 2-3 shows the average historical earnings and dividend growth rates of the comparable group for the period 1996 through 2005, with both five- and ten-year averages. Even though dividend per share growth is preferable, since an exact correlation can be made to other components in the DCF Model (dividends are part of the dividend yield calculation), earnings are necessary to generate dividends, so earnings growth is also included in this analysis.

Concerns have been raised in other cases that the historical growth rates used by DRA are not similar to those being forecasted. Therefore the historical growth rates are not indicative of future growth. One only has to look at some of the component years of the historical earnings growth rates listed on Table 2-3, for example, 1996, 2001, 2002, and 2004, to see that they are in a relative range comparable to those forecasted growth rates on Table 2-4.

DRA calculates thee average historical five- and ten-year earnings growth rates respectively as 6.50% and 5.35%. The average historical five- and ten-year dividend growth rates calculated by DRA are 2.44% and 2.43 %.

(ii) *Sustainable Growth*

The expected future dividend growth rate can also be measured by examining the sustainable growth rate, which is equal to the product of the retention ratio and the book return on equity. Growth in earnings and dividends can only be sustained if part of earnings is reinvested by the company. DRA calculates sustainable growth per the method discussed in The Cost of Capital – Estimating the Rate of Return for Public Utilities,[2] which states that sustainable growth is measured as "[T]he rate of return on book equity, ROE, times the proportion of earnings that is retained within the firm, instead of being paid out as dividends." The sustainable growth rate was calculated by multiplying the five-year average book return on equity by the earnings retention rate (the retention rate is one minus the dividend payout rate)."[3] The group's average five-year sustainable growth rate is 2.83% and the ten-year sustainable growth rate is 2.98% (Table 2-3).

[2] The Cost of Capital – Estimating the Rate of Return for Public Utilities, by A. Lawrence Kolbe and James A. Read Jr., with George R. Hall, 1985.

[3] Ibid, pages 55 and 99.

(iii) *Overall Historical Growth*

Based on the average historical earnings, dividend, and sustainable growth rates, the average historical growth is 3.75%.

(b) Forecasted Growth Rates

DRA also considered several forecasted earnings growth rates, including Zack's, First Call, Value Line, and Reuters, as shown on Table 2-4. DRA took a weighted average of the forecasts, based on the number of companies for which each organization provides a forecast. This average is 8.26%.

(c) Conclusion - Growth Rate

Based on the above discussion, DRA has determined an average growth rate of 6.01%.[4]

3) Results of DCF Model

The results of the DCF Model using data from the comparable group are summarized in Table 2-5 and the formula referred to on page 2-2. Based on current dividend yields (Table 2-2) and an expected dividend growth of 6.01%, the expected three-month dividend yield for the comparable group is 2.94%, the expected six-month dividend yield is 3.00%, and the expected twelve-month dividend yield is 3.03%. Combining the expected three-, six-, and twelve-month yields with the expected growth rates produces expected returns on equity of 8.95%, 9.01%, and 9.03%, with an average of 9.00%. GSWC estimates 7.21% for its Constant Growth DCF model, a range of 10.5% to 10.6% of expected returns on equity for the comparable group, and a range of 10.9% to 11.0% for GSWC itself. GSWC then adds a risk premium of 40 basis points (which it adds to all its model results).

[4] Average of the Average Historical Growth Rate of 3.75% and Average Forecast Growth Rate of 8.26%.

D. Risk Premium Model

The Risk Premium Model recognizes that investors have different requirements regarding risk and return for common stocks as compared to bonds. The RP equation is written as follows:

kt = kd + RP,

where **kt** is the cost of equity, **kd** is the cost of debt, and **RP** is the Risk Premium.

This model is based upon the assumption that investments in common stock are riskier than investments in long-term debt, since stockholders are but residual claimants to earnings and assets in the event of liquidation. As a result, investors holding common stock expect higher returns. In order to develop the required return on equity, this greater risk is stated as a premium, which is added to the estimated cost of long-term debt. As a result of the variance in historical premiums, an average risk premium is calculated over an extended period of time, five and ten years in this case.

DRA applied the RP Model to the same comparable group used in the DCF model in order to determine the appropriate return on equity for GSWC. DRA used historical earned ROE's for the comparable group in order to estimate the stockholder's average expected return on equity. These returns are easily accessible to the investor (annual reports and financial web sites) and require no computation. An alternative is to use the authorized ROE, but this is rejected by DRA because the authorized ROE is not always an accurate measure of what is expected by investors. The authorized ROE can be distorted by the effect of settlements (the ROE could be inflated or deflated to account for trade-offs in other areas of a settlement) as well as by penalties imposed or premiums applied to an authorized ROE by a Commission. The annual yields on 10-year and 30-year Treasury bonds were subtracted from the comparable group's average returns on equity for each year to determine the annual risk premium.

1) Results of Risk Premium Model

Table 2-6 presents the forecasted interest rates for the test period, taken from Data Resources Inc. (DRI) Report for April 2006. DRI has consistently been accepted by the

Commission for use in determining the cost of capital.[5] For the period 2007 to 2009, the average forecasted rate for 10-Year Treasury bonds is 5.18% and the average forecasted rate for 30-Year Treasury bonds is 5.37%.

Table 2-7 provides the results of the Risk Premium Model for DRA's comparable group. The average premiums are 5.30% and 4.86% for the ten-year period and 5.45% and 4.77% for the five-year period, based upon 10-year Treasury bond yields and the 30-year Treasury bond yields, respectively.

To derive return on equity, DRA combined the average equity risk premiums with the average interest rate forecasts for the test period. Based on the 10-year risk premiums, DRA calculated an expected return on equity of 10.48% for the 10-year Treasury bond yield and 10.23% for the 30-year Treasury bond yield. Using the 5-year risk premiums produced expected returns of 10.64% for the 10-year Treasury bond yield and 10.14% for the 30-year Treasury bond yield. Combining these results, DRA calculated an average ROE of 10.37%.

E. Summary of Model Results

Table 2-8 summarizes the results of the DCF and RP models prepared by DRA. Averaging the results of these financial models produces an expected return on equity of 9.68%. GSWC's models yield mid-points of each range of 10.9% and 11.3% after an adjustment of 40 basis points for a perceived risk. GSWC is recommending an 11.2% return on equity. For comparison purposes Graph 2-1 is shown below. This graph shows the average authorized ROEs and RORs for Class A water utilities since 1993. It should be noted that GSWC's requested ROE of 11.2% exceeds any authorized ROE for a Class A water utility since 1993.

[5] 38 CPUC 2nd at pages 233 & 238, Southwest Gas Corp., et al (1990) and 46 CPUC 2nd at pages 319, 360-361, Pacific Gas & Electric Co. (1992).

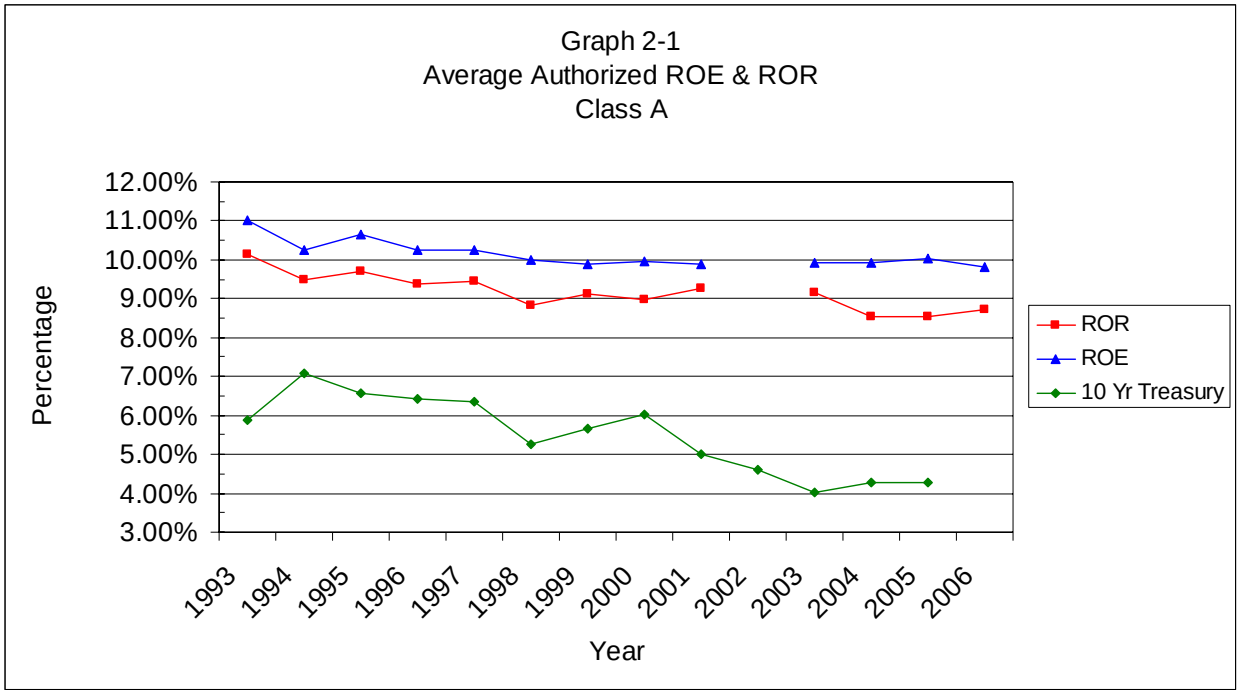
Graph 2-1
Average Authorized ROE & ROR
Class A
12.00%
11.00%
10.00%
9.00%
8.00%
7.00%
6.00%
5.00%
4.00%
3.00%
Percentage
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
Year
ROR
ROE
10 Yr Treasury

Table 2-1
Golden State Water Company
Comparable Group
2005

Company	S&P Bond Rating	Average Common Equity Ratio	Market to Book
American States Water	A-	50.9%	2.25
California Water Service	A+	51.4%	2.75
Connecticut Water Service	A	55.6%	2.17
Middlesex Water	A-	43.6%	2.16
Aqua America	A+	47.3%	4.86
SJW Corp.	N/A	56.8%	2.39
Average	A	50.9%	2.76

Source: S&P Earnings Guide, SEC 10K

Table 2-2
Golden State Water Company
Current Annualized Dividend Yield
Comparable Group

Company	3-Month Dividend Yield %	6-Month Dividend Yield %	12-Month Dividend Yield %
American States Water	2.60	2.75	2.90
California Water Service	2.76	2.93	3.02
Connecticut Water Service	3.45	3.46	3.47
Middlesex Water	3.76	3.72	3.55
Aqua America	1.61	1.67	1.75
San Jose Water	2.48	2.44	2.46
Average	**2.78**	**2.83**	**2.86**

Current Yield = Do/Po

Source: Yahoo Finance

Table 2-3

Golden State Water Company

Average Historical 5- & 10-year Growth Rate

Comparable Group

1996-2005

Year	Earnings Growth %	Dividend Growth %	Sustainable Growth %
1996	15.06	2.14	3.68
1997	2.80	2.49	3.54
1998	-0.08	2.77	3.00
1999	5.56	2.33	3.17
2000	-2.33	2.39	2.31
2001	8.32	2.57	2.62
2002	8.37	3.09	3.10
2003	-4.55	2.99	2.13
2004	17.89	2.69	2.99
2005	2.45	0.86	3.30
5-Year (2001-2005)	**6.50**	**2.44**	**2.83**
10-Year (1996-2005)	**5.35**	**2.43**	**2.98**
Overall Historical Average			**3.75**

Table 2-4
Golden State Water Company
Forecasted Earnings Growth Rates

Company	ZACK'S	First Call	Valueline	Reuters
	%	%	%	
American States Water Co.	6.00	6.00	12.00	4.50
California Water Service	9.00	9.00	8.50	10.00
Connecticut Water Service	-	-	-	-
Middlesex Water	6.00	6.00	-	6.00
Aqua America	9.30	9.50	13.00	9.07
SJW Corp.	-	-	-	-

Overall Weighted Average of Forecasted Growth Rates **8.26**

Source: Zack's 05/06
First Call 03/06
Valueline 01/06
Reuters 05/06

Table 2-5
Golden State Water Company
Discounted Cash Flow Model Summary
Comparable Group

Component		Comparable Group %
3-Month Current Yield	1/	2.78
Growth Rate	2/	6.01
Expected Yield	3/	2.94
ROE	***4/***	***8.95***
6-Month Current Yield	1/	2.83
Growth Rate	2/	6.01
Expected Yield	3/	3.00
ROE	***4/***	***9.01***
12-Month Current Yield	1/	2.86
Growth Rate	2/	6.01
Expected Yield	3/	3.03
ROE	***4/***	***9.03***

1/ Current Yield = Do/Po
2/ Growth Rate = g
3/ Expected Yield = D1/Po = Do/Po * (1 + g)
4/ ROE = D1/Po + g

Table 2-6
Golden State Water Company
Forecast of Interest Rates - Average Year

Description	Forecast Date	Forecast 2006 %	Forecast 2007 %	Forecast 2008 %	Forecast 2009 %	Average for 2007-2009 %
30-Year Treasury Bonds	DRI - 04/06	4.97%	5.02%	5.35%	5.73%	5.37%
10-Year Treasury Bonds	DRI - 04/06	4.93%	4.94%	5.14%	5.47%	5.18%

Table 2-7
Golden State Water Company
Risk Premium Analysis
Comparable Group

Year	Return on Equity 1/ %	Average Yearly Yields		Risk Premium	
		30-Year T-Bond %	10-Year T-Bond %	30-Year T-Bond %	10-Year T-Bond %
1995	11.12	6.88	6.57	4.24	4.55
1996	11.93	6.70	6.44	5.23	5.49
1997	11.77	6.60	6.35	5.17	5.42
1998	10.97	5.58	5.26	5.39	5.71
1999	10.90	5.87	5.65	5.03	5.25
2000	9.85	5.94	6.03	3.91	3.82
2001	10.12	5.49	5.02	4.63	5.10
2002	10.53	5.41	4.61	5.12	5.92
2003	9.13	5.02	4.01	4.11	5.12
2004	9.55	5.12	4.27	4.43	5.28
2005	10.13	4.56	4.29	5.57	5.84
			10-Year Average Premium	4.86	5.30
			5-Year Average Premium	4.77	5.45
			Forecasted Interest Rates for 2007-2009	5.37	5.18
			Projected Returns on Equity		
			10-Year Average	***10.23***	***10.48***
			5-Year Average	***10.14***	***10.64***

1/ Earned ROE is used because it is most accessible to the investor.
* From Year 2002 on, the historical from the Federal Reserve is for 25 year plus long
term bonds

Table 2-8
Golden State Water Company
Summary of Model Results
Comparable Group

Discounted Cash Flow Model		
Growth Rate		6.01
Three-Month ROE		8.95
Six-Month ROE		9.01
Twelve-Month ROE		9.03
DCF Average		***9.00***
Risk Premium Model		
	5-Year	10-Year
30-Year Treasury Bond	10.14	10.23
10-Year Treasury Bond	10.64	10.48
RP Average		***10.37***
Return on Equity Average		***9.68***

CHAPTER 3: RISK AND ECONOMIC CONDITIONS

A. Overview

In Chapter Two of this report, DRA determined that the common equity investor expects to earn an average return of 9.68%. This determination is the result of a quantitative analysis using market-based financial models and financial data from a group of water companies of comparable risk. In addition to this quantitative analysis, DRA assesses the level of business and financial risk faced by GSWC.

A company's total risk is the combination of business risk and financial risk. Business risk may be defined as the uncertainty inherent in the projections of future operating income relating to the fundamental nature of the company's business. Given the nature of the industry, the business risk of a regulated utility consists primarily of regulatory risk. Financial risk relates to the amount of debt in the capital structure; the larger the debt portion, the greater the financial risk.

B. Regulatory Risk

A multitude of mechanisms are provided by the Commission which reduce regulatory risk and protect earnings from inflation, regulatory lag, estimating errors, input price variability, loss due to catastrophic events, Safe Drinking Water Act (SDWA) compliance, and reduce operating leverage by 50%. These mechanisms include - Balancing Accounts for Purchased Water, Purchased Power, and Pump Taxes; Memorandum Accounts for Catastrophic Events; Future Test Years; Memorandum Accounts for SDWA compliance; 50% Fixed Cost Recovery; and Construction Work in Progress in Rate Base.

1) Elimination of Earnings Test

GSWC's regulatory and business risk have been reduced as a result of the elimination of the earnings test. The Commission has recently eliminated the earnings test for the recovery of the water supply balancing account under

collections.[6] The elimination of the earnings test will allow water utilities to recover the full amount of the under collected balance regardless of the level of utility earnings that are above the Commission authorized rate of return. The removal of the earnings test will now allow the water utilities to further enhance profits and basically eliminate their regulatory risk associated with the recovery of water supply costs.

C. Financial Risk

Financial risk relates to the amount of debt used in the capital structure. The greater the ratio of debt to equity, the greater the financial risk. For regulated utilities, the percentage of debt and equity included in the capital structure has a direct impact on rates charged ratepayers. A balanced capital structure should provide financial stability to a utility and produce reasonable rates for its customers, as well as continuity of service.

GSWC has proposed a capital structure consisting of long-term debt and common equity. GSWC's projected average common equity ratio for the years 2007 – 2009 is 50.80%, which is very similar to the comparable group's average of 50.90%. DRA concurs with GSWC's capital structure.

1) Standard & Poor's Assessment

A company's total risk (business risk plus financial risk) is indicative of its overall financial integrity and ability to attract capital. Standard & Poor's (S&P), a rating agency used by DRA, evaluates a company's total risk in order to assign a credit rating, which is a direct measure of capital attraction. S&P's evaluation includes a subjective analysis of business risk, including such things as managerial quality and regulatory environment. A quantitative analysis is also done, consisting of a group of financial ratios designed to measure how well a company can generate earnings and cash flow to meet its debt obligations. These ratios are a mix of measures relating to both business and financial risk. A rating of "AAA"

[6] D.06-04-037, mimeo, p. 2.

through “BBB” is considered “investment grade”. Any rating lower than a “BBB” would be considered speculative and more susceptible to adverse circumstances or economic conditions.

S&P does not rate GSWC, but they do rate American States Water, GSWC’s parent. American States Water is rated A-.

D. Conclusion

GSWC’s low business risk and the investment grade rating of its parent are indications of a well-managed company.

CHAPTER 4: CONCLUSION

DRA uses two generally accepted models, the DCF and the RP to estimate the return on equity. DRA's estimates of the average cost of equity derived from the DCF and RP model for the companies in the sample are shown in Tables 2-8. The resulting overall average cost of equity capital is 9.68%. DRA believes that the return on equity should be based on model results and that the ratepayers should not be required to pay for any additional adjustments related to a perceived risk.

QUALIFICATIONS AND PREPARED TESTIMONY OF RAYMOND CHARVEZ

Q.1. Please state your name and business address.

A.1. My name is Raymond Charvez. My business address is 505 Van Ness Avenue, San Francisco, California.

Q.2. By whom are you employed and in what capacity?

A.2. I am employed by the California Public Utilities Commission - DRA Water Branch - as a Financial Examiner IV.

Q.3. Please briefly describe your educational background and work experience.

A.3. I have been employed by the California Public Utilities Commission since 1971. I have worked on formal matters involving electric, gas, telephone, and water utilities.

Q.4. What are your responsibilities in this proceeding?

A.4. I am responsible for DRA's Water Branch Report On the Cost of Capital For Golden State Water Company.

Q.5. Does this conclude your prepared testimony?

A.5. Yes, it does.